



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/224,401	12/31/1998	SRINATH HOSUR	TI-28734	3730
23494	7590	09/15/2004	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			NGUYEN, HANH N	
			ART UNIT	PAPER NUMBER
			2662	

DATE MAILED: 09/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/224,401

Applicant(s)

HOSUR ET AL.

Examiner

Hanh Nguyen

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on The Board's Opinion on 7/20/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 29-45 is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

In response to the Board 's opinion stated in Issues filed on 07/20/04, the Office reopens prosecution based on newly found references cited below.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 4, 17, 22 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 17 and 22, it is not clearly stated what is meant by “an output signal corresponding to a magnitude of the first and the second input signals”.

In claim 4, it is not clearly stated what is meant by “the output signal comprises a sum of magnitude of first and second input signals”.

In claim 5, it is not clearly stated what is meant by “the first output signal corresponding to a magnitude of the first input signal and the second output signal corresponding to a magnitude of the second input signal”.

In claim 28, it is not clearly stated what is meant by “at least one transmit power control signal includes a plurality of transmit power control signals”.

Note: Magnitude of input signals is not described in the specification.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2662

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-6, 9, 10, 11, 12, 15, 16, 23, 27, 28 are rejected under 35 USC 103(a) as being unpatentable over Kato et al. (US pat. No. 5,859,875) in view of Tiedemann, Jr. et al. (US Pat. No. 6,317,587 B1).

In claim 1, 2, 3, 7, 8, 13, 14, 17, 18, 19, 20, 21, 22, 24, 25 and 26, Kato et al. discloses, in Fig. 2, a terminal (a circuit) comprising a reception status determination circuit 211 (a measurement circuit) receiving signals indicating power (a first and a second signals) from two antennas 109a, 109b of a base station using space diversity (a measurement circuit receives a first and a second signals from a first antenna and a second antenna of a transmitter) see col. 7, lines 20-25 & col. 8, lines 1-5. The reception status determination circuit 211 outputs the two signals to data selection circuit 208 (producing an output signal corresponding to a magnitude of the two input signals). See col. 8, lines 17-22. A data selection circuit 208 (control circuit) selects the best signal. See col. 8, lines 45-50. Kato et al. does not disclose the control circuit coupled to receive the output signal and a reference signal, produce a control signal in response to a comparison of the output signal and the reference signal.

Tiedemann, Jr. et al. disclose a mobile station 30 comprising a RCVR 42 (a measurement circuit) receiving signal power from base station 50. The signal power is provided to control processor 46 (a control circuit coupled to the output signal). See col. 5, line 62 to col. 6, line 8. The received signal is received on pilot channel (received signals comprising pilot symbols, see col. 9, lines 15-30; claims 2, 8, 13 and 18,). The control processor 46 compares the received power with a threshold and provide power control information (producing a control

Art Unit: 2662

signal in response to a comparison of the output signal and the reference signal). See col.6, lines 33-38. The power control information is transmitted to the base station 50 via transmitter 36 (transmitting control information to the base station). See col.6, lines 40-45 & lines 65-67. (In claim 25,) The base station 50 receives the control power information at a receiver 54 from the mobile (receiving control signal from an external source). See col.7, lines 1-5. The power control information is decoded by a decoder 55 and provided to processor 58 which provides a control signal to transmitter 64 indicative a modified transmission power level (producing a transmit power level and transmitting the transmit power level from antenna). See col.7, lines 20-25. Therefore, it would have been obvious to one ordinary skill in the art to modify the terminal of Kato et al. by having a control processor as suggested by Tiedemann, Jr. et al. to compare a threshold signal power with a received signal in order to increase a transmission control power when the received signal is too weak or decrease when the received signal is too high.

In claim 9, Kato discloses the data selection circuit 208 (control circuit) is in a PC client (terminal). Therefore, the control circuit would have been formed on a single integrated circuit as well-known in the art.

In claim 10, Kato does not disclose the estimated signals is a Raleigh fading estimate. Tiedemann discloses that the terminal sends TPC signal to base station in response to detected low received power on a favor link. Therefore, the detected low power signal is faded during transmission and is well-known in the art to be a Rayleigh fading.

In claim 11, Kato et al. discloses signals transmitted from antennas 109a, 109b (a number of transmitting antenna) of base station to antenna 201 of a terminal. Therefore, the path diversity of signals would be twice the number of antennas.

In claim 12, Kato et al. does not disclose that the measurement circuit receiving a third input signal from a third antenna, a fourth input signal from a fourth antenna at the same time. It is a well-known skill in the base station of Kato et al. to have four antennas located at physical locations to transmit identical signals from each antenna simultaneously.

In claim 16, the limitation of this claim has been addressed in claim 1.

In claim 23, the limitation has been addressed in claim 1.

In claims 27 and 28, the limitations have been addressed in claim 1.

Claims 4-6, and 15, Kato discloses in high speed mode, data A+B (the output signal) comprising a sum of data A and data B (magnitude of the first and second input signals). See col.9, lines 50-60.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kokudo (Pat.5970061) discloses Transmission Space Diversity Controlling Method and Transmission Space Diversity Apparatus.

Alamouti et al. (US Pat. 6,775,329 B2) discloses Transmitter Diversity Technique for Wireless Communications.

Gilhausen et al. (Pat. 5056109) discloses Method and Apparatus for Controlling Transmission Power in a CDMA Cellular Mobile Telephone System.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Nguyen whose telephone number is 703 306-5445. The

Art Unit: 2662

examiner can normally be reached on 571 272 3092 from 8AM to 6PM. The examiner can also be reached on alternate

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached on 571 272 3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hanh Nguyen

A handwritten signature in black ink, appearing to read 'HNguyen'.

September 13, 2004